

AGRICULTURAL ECONOMICS

PART – A : RESEARCH METHODOLOGY

Unit-1: Nature and purpose of research: Social science research. Special problem in social science research. Pure and applied research deduction and induction method, development of social science research, with special reference to agricultural economics in India.

Unit-2: Scientific method: the world of agricultural economist, methodological and theoretical orientation, uses of theory substantive and methodological objectives. Illustrations of steps involved in research studies.

Unit-3: Problems in agricultural economics research: sources, select and formulation of problems.

Unit-4: Development of working hypotheses, properties of hypotheses sources of hypotheses, research problems and hypotheses.

Unit-5: Planning of study; explanatory and decision problems for choice in research.

Unit-6: Models and methods in agricultural economics research; research behavioral research and policy research; expectation and model specification; model building in modelling choices- detail, expectation, time, scope decision behaviour.

Unit-7: Decision problems in agricultural economics research, in requirements implied by alternative specifications of decision models, strategies in decision models, linear programming and methodological comments.

Unit-8: Observation, concept of measurement, qualitative and quantitative measurement, observation process, criteria for choice among observational alternatives-historical, experiment and survey, role of observation.

Unit-9: Data collection and processing: Historical data: properties of historical data. Regression problem with time series; **Experimental Methods:** types of experiments, selecting on experimental system, identifying elements in the experiment and designing experiments; **Survey Method:** types of survey, sources of survey errors conceptual and empirical, design alternatives- observation units, population boundaries, sampling units and frame, sampling criteria, conduct problems, conduct alternative.

Unit-10: Interpretation, presentation and use of research results.

PART – B : AGRICULTURAL ECONOMICS

Unit-I. Definition, scope and subject matter of economics, techniques of economic analysis, and limitations of economics; **Theory of Demand:** Demand function, elasticity of demand, shifts in demand, utility analysis of demand, indifference curve and consumer equilibrium, Slutsky theorem, elementary revealed preference theory, nature and properties of demand functions for agricultural commodities; **Theory of Firm:** Optimising behavior of firm, profit and sale maximization, factor-factor relationships, product-product relationships, production functions, demand functions for factors of production, derivation of supply function, nature of supply function for agricultural commodities; **Theory of Cost :** Nature of cost, short run and long run costs, marginal and average cost schedule, cost function; **Marketing :** Classification of markets, competitive firm and industry, nature of pure monopoly, monopolistic competition, duopoly and oligopoly market, effect of taxation on price and output; **Theory of Distribution :** Marginal productivity theory of distribution in perfectly competitive markets, factors price determination, theory of rent, theory of wages, interest and profits; **International Trade:** Theory of international trade, theory of comparative advantage,

mechanism of adjustment, exchange rate variations, tariffs and quotas, balance of payment, inter-regional trade and agreements and international trade of agricultural commodities.

Unit-II. Definition, nature and scope of macro-economics, macro-economic variables and parameters, macro-economic models, static and dynamic equilibrium; **National Income Accounting** : Concept and measurement of national income, problems in estimation of national income; **Keynesian and Post Keynesian Macro-Economics**: Methodology and Keynesian concepts, classical theory of employment, Say's law, modern theory of employment, effective demand, general equilibrium of product and money markets, monetary policy, fiscal policy, effectiveness of monetary and fiscal policy; **Consumption Function**: Investment and saving, concept of multiplier and accelerator, output and employment; **Rate of Interest**: Classical, Neo-classical and Keynesian theory of unemployment and full employment; **Theory of Money** : Money and its types, different versions of quantity theory of money and Keynesian reformulated quantity theory of money; **Inflation** : Nature and types, causes and consequences, effects and control of inflation, stabilization policies and inflation; Economic development and concept of growth and development, meaning of underdevelopment, underdeveloped and highly developed countries, characteristics of developing countries, measurement of economic growth; **Theory of growth** : Classical, neo-classical and modern growth models and their applicability to developing countries; **Developing Strategy**: Institutional approaches and non-economic factors in economic development, dualism in development, balance and unbalanced growth, investment policies and criteria for developing countries.

Unit-III. Concept and Definition of Farm Management : Scope of farm management role of management in Indian agriculture structure and typical features of farms in India, nature and characteristics of farming, farming versus industry; **Principle of farm Management** : The principle of comparative advantages, law of diminishing returns, the principle of enterprise combination, cost principle, time element in management decision and decision criteria, compounding and discounting; **The Production Relationship** : Factor-product relationship between resource and products, three stages of production, elasticity of production, concept of rationality and irrationality, necessary and sufficient condition; **Factor-Factor Relationship** : Resource substitution and least cost combination, isoquant, ridge line, scale line, expansion path and elasticity of factor substitution; **Product-Product Relationship** : Horizontal and vertical combination of products, different relationship in products-joint, competitive, compliments, supplements and antagonistic, product substitution, transformation curve, rational and irrational zone, elasticity of product substitution; **Decision Making in Agriculture** : Frame work in decision making, typical farm management decisions, process of decision making, under risk and uncertainty, decision theory and game theory and their implication; **Farm Planning** : Farm planning and its importance at micro and macro levels, farm planning in India, complete and partial budgeting, steps in marketing farm budget; **Linear Programming**: Assumption of linear programming model, essential element of linear programming, formation of maximization and minimization problem, concept of basis graphic and simplex solution of linear programming to farm decision making; **Production Function** : Types and forms of production functions, characteristics and interpretation of different production functions; Farm size and returns to scale, measures of farm business and efficiency; **Farm Labour** : Measure of labour efficiency and factors affecting labour efficiency; **Farm Records** : Farm inventory, valuation, depreciation and net worth statement.

Unit-IV. Concepts in markets and marketing, scope and magnitude of agricultural marketing; Demand for farm products, quantitative estimation of demand relationships, demand projections and derived demand; **Supply of farm products** : Factors influencing supply, supply projections and marketable surplus; Agricultural product prices and their determination, price stabilization, price discrimination; Marketing channel, agencies and functions, marketing costs and margins, marketing efficiency; Forward trading and speculation, future markets and price stability; System of marketing of farm products in India, study of regulated markets; **Temporal Market Price Relationships**: Time and storage cost, intertemporal price and equilibrium models, temporal price level, price changes overtime, intertemporal and spatial price equilibrium models for single and multiple products; **Agricultural Price Policy** : Its role and function, basic concept in agricultural price policy, agricultural policy in India.

Unit-V. Importance and scope of research in agricultural economics, types of research, fundamental vs applied, concept of research problem, research prioritization, selection of research problem, approach to research process; **Hypothesis** : Meaning, characteristics, types of hypothesis, review of literature, setting of objective and hypothesis, testing of hypothesis; **Sampling Theory and Sampling Design** : Sampling error, methods of sampling, probability and non-probability sampling methods, criteria to choose; **Research Design and Techniques** : Type of research design; **Data Collection and Processing** : Assessment of data needs, sources of data collection, mailed questionnaire and interview schedule, structured, unstructured, open ended and closed-ended questions, scaling techniques; **Preparation of Survey Schedule** : Problems in measurement of variables in agriculture, interviewing techniques and field problems, methods of conducting survey, reconnaissance questions, scaling techniques; **Tools of Analysis** : Data processing, interpretation of results, preparing research reports/thesis, universal procedures for preparation of bibliography, writing of research articles; **Problem of Agricultural Economics Research** : Sources, select and formulation of problem; **Model and Method in Agricultural Economics Research** : Behavioural search and policy research, expectation and model specification, model building and choices; Decision problem in agricultural research in requirements implies by alternative specifications of decision models, strategies in decision model, linear programming and methodological comments.

Unit-VI. Meaning and concept of cooperation, principle of cooperation, economic planning and cooperation history of cooperative movement in India; **Cooperation and Agricultural Planning** : Subjects and need of agricultural development, nature of cooperative organization needed for agricultural development, cooperative farming, cooperative irrigation, cooperative credit, cooperative consolidation of holdings, cooperative marketing, limitations of organizations in agricultural development, agricultural cooperations in various plans; **Structure of Cooperative Societies in India** : Working of cooperative societies, organization and working of cooperative credit, marketing, production, supplies and service societies; Role and importance of credit in the expanding capital requirements of agriculture; **Economic Principal Involved in Agricultural Finances** : Concept of 3 C's and 3 R's of credit; **Principal of Financial Management** : Different financial ratios and their implications, alternatives in capital acquisition and considerations involved in analysis; Credit instruments, agricultural credit and its relative importance; Problems of credit between cooperative bank and commercial in financing agriculture, comparison and analysis of credit agencies; **Definition of Agricultural Policy** : Need for agricultural policy, nature and scope of agricultural policy

and its relation with other disciplines; The objective agricultural policy, their derivation ideology and their quantification; The instrument of agricultural policy and their relative effectiveness in Indian agriculture; Agricultural policy under various political and economic conditions, the theory of economic policy and policy models, the process for evaluating agricultural policies; Traditional areas of agricultural policy, agricultural price, marketing, credit, land and water use policies; Agricultural labour and employment policies, agricultural inputs, production and distribution policies, agricultural education, research and extension policies, agricultural development policy and planning, foreign agricultural policy.

Unit-VIII. *Place of Agriculture in India's Economy* : Characteristics of Indian agriculture, structure of Indian agriculture, wage levels and wage differential in agriculture, man-power planning and agriculture doctrine of new marginal productivity of labour and possibilities of labour transfer from agriculture to non agriculture sector; ***Capital*** : Role of capital in agricultural production, nature and extent of credit needs of the farmers, debt burden of the farmers, agricultural credit agencies and their efficiencies, Taqavi loans, cooperative credit, commercial bank credit; ***Organisations*** : Efficiency of agriculture under various system and type of farming, impact of new agricultural technology on the structure and functional efficiency of farms especially in respect of irrigation, seeds and fertilizers; ***Agricultural Taxation*** : Principles and policies of agricultural taxation in India, Tax burden on agriculture possibilities and consequences of agricultural income tax.

Unit-VIII. Concept of variables, equations and solving of simultaneous equations, factorization, indices; ***Differentiation*** : Some common laws of differentiation, differentiation of power and exponential function; ***Matrix Algebra and Determinants*** : Concept of vector, matrix, addition, subtraction, multiplication and inversions; ***Theory of Sampling*** : Purposive and random, multistage sampling, stratified sampling, probabilistic sampling; Characteristics of normal, binomial and poisson distribution, concept of standard deviation, standard error and variance; ***Test of Significance*** : t-test, Z-test, F-test and χ^2 -test; ***Correlation and Regression*** : Ordinary least square (OLS) method, specification of the variables and specification errors; ***Time Series Data*** : Problem of auto-correlation and multicollinearity; Analysis of business time series; Construction and use of index number; Interpolation and extrapolation.